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**The impact of Dividend Announcements on share price and trading volume: Empirical evidence from the Gulf Cooperation Council (GCC) countries**

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**The impact of Dividend Announcements on share price and trading volume: Empirical evidence from the Gulf Cooperation Council (GCC)**

**Abstract**

This paper investigates the stock market response to dividend announcements in high growth emerging markets of Gulf countries. Our sample includes 1092 dividend announcements from 299 listed firms over the period 2010 - 2015. In the environment where there is an absence of capital gain and income tax, we find some evidence for the stock price reaction that partly supports the signaling hypothesis. Our findings show that the GCC market is inefficient because of the leakage information before the announcement in bad news, and the delay of share price adjustment in good news. In addition, we report significant trading volume reaction in all the three announcements clusters, where dividends increase, decrease, and are constant, lending support to the hypothesis that the dividend change announcements have an impact on the trading volume response due to different investors' preferences. These results are highly recommended to financial analysts and investors dealing with the GCC market.

**Keywords:** dividend announcements, abnormal returns, abnormal trading volume, GCC

## 1. Introduction

Numerous studies report evidence consistent with the information hypothesis of dividends, that announcements of dividend policy changes do convey information about firm's future prospects (Michaeli, Thaler, and Womack, 1995; Akhigbe and Madura, 1996; and Lipson, Maquieira, & Megginson, 1998). It is suggested in the literature that in perfect capital markets, dividend announcement should be irrelevant to share pricing (Miller and Modigliani, 1961). However, the literature pertaining to imperfect markets argues that dividends signal information on firm prospects, thus share market price should react to dividend announcement. This has led to perplexity for the issue of informativeness due to available mixing views. Therefore, analyzing the market reaction to dividend announcements is very important to managers and shareholders. This paper examines the stock price and trading volume reactions to dividend announcements in tax free environment, using data from the Gulf Cooperation Council (GCC) region (Kuwait, Bahrain, Saudi Arabia, Oman, Abu Dhabi, Qatar and the United Arab Emirates). Given these facts, this paper aims to determine how public announcements relating to dividend policy affect share prices and trading volumes in the GCC markets, using an event study methodology. This research answers the following research question: *"How do stock return and trading volume change around the dividend announcement date in short and long term in a tax free environment?"*

This paper examines (1) the effect of dividend changes on share prices around the dividend announcement over both short and long terms in an absent tax market (GCC), and (2) the effect of dividend change announcements on trading volumes in the GCC market.

Miller and Modigliani (1961) propose the dividend irrelevance theory, which suggests that all efforts spent on dividend decisions are wasted, and a managed dividend policy is irrelevant under the circumstance of a perfect capital market assumptions where there are no personal or income taxes, there is no difference between taxes on dividends and capital gains, financial leverage has no effect on the firm's cost of capital, there is no transaction, with rational investors and absolute certainty. The dividend policy will not affect the firm's market value (Black & Scholes, 1974; Conroy, Eades, & Harris, 2000). This means that the market will not respond to the level of dividends, whether high, low or non-existent.

Although M&M's arguments theory is logical and consistent within a perfect capital market, various market imperfections are being observed in the real world markets, such as information asymmetries, transactions costs and conflicts of interest between managers and

shareholders which can be observed in GCC. However, GCC is a tax free on dividend and capital gain (see Al-Hunnayan, 2011; Rezvanian, Ariss, and Mehdian, 2015), where other assumptions of perfect capital markets are not existed. In this respect, the irrelevance theory becomes highly debatable and these market imperfections might indeed mean that dividend policies do matter. Therefore, tax based signalling hypothesis might be applicable to examine the effect of dividend announcements on share price and trading volume in GCC region. According to Amihud & Murgia (1997, p.397) “*Tax-based signalling models propose that the higher tax on dividends is a necessary condition to make them informative about firms’ values*”. In other words, dividends would not have information and be informative if it is not for the higher taxes on dividends relative to capital gains that they apply to shareholders. The absence of taxation provides us with an opportunity to examine this prediction. If we find that the stock price and trading volume react to dividend announcements, then this would suggest that the higher taxation on dividends relative to capital gains is not a necessary condition for them to have information and be informative. It would also suggest that there are other factors, beyond higher taxation, that make dividends informative.

This study contributes to existing knowledge of the impact of dividend announcement on market reactions in several ways:

(1) Examining how investors might react to the announcement of a dividend change when there are no tax considerations. The findings of this paper make an important and novel contribution to the existing literature on the announcements of dividend changes which are associated with a stock price and trading volume changes in free tax environment. These findings contradict with the irrelevant theory and tax based signalling models. This could be due to concentration ownership, information asymmetry between managers and shareholders, the low corporate transparency (Al Yahyae, 2006). We find that the dividend announcements are significantly informative in GCC although it is a free tax region. This means dividend announcements impact on share price and trading volume in GCC, as this could follow clientele effect rather than irrelevant theory and tax based signalling hypothesis. The clientele effect arises due to the idiosyncratic preferences for dividend policies by different groups of investors. Changes in dividend policy may, therefore, have a substantial effect on investors to reshuffle their portfolios towards the firm’s shares (Elton and Gruber, 1970; Pettit, 1977). The clientele effect expects that share prices will be affected by changes

in dividend policy only if the shifts in demand for the company's equity are sufficient to induce shifts in the share price.

(2) We extend previous relevant studies in the field to investigate the pattern of dividend announcement effect on trading volume in GCC markets (following Amihud and Murgia, 1997; and Al-Yahyaee, Pham, and Walter, 2011). In other words, our aim is to use cumulative abnormal trading volume (CATV) for short term event window as a dependent variable. By doing so, we investigate: (a) which changes have more impact on investors' behavior, and (b) whether the announcement conveys new information to investors which, in turn, influences their trading. This is the first study examining tax based signalling models by using trading volume as a dependent variable; we get a significant result that confirms the relations between the announcements of dividend changes and the trading volume response in the absence of taxes on dividend and capital gains in GCC market. This indicates that the GCC's investors are interested in the dividend payment.

(3) Since there are few studies focusing on GCC countries- e.g. Al-Yahyaee et al. (2011) for Oman, Asiri (2014) for Bahrain and AlQudah and Badawi (2015) for Saudi Arabia- it is clear that no previous studies considered all GCC countries as a whole market. Hence, to the best of our knowledge, this is the first empirical paper on market reaction in share price and trading volume around dividend announcement using data for the majority of GCC countries. Therefore, this study helps analysts to understand GCC market mechanism by analyzing GCC investors' behavior as a whole. Moreover, the study helps financial managers to know whether the dividend announcements conveyed is correctly delivered by GCC investors. Also, it shows whether the timing of the announcement is appropriate or not. Further, it increases investors' awareness to rationalize their behavior, whereas for academics, this study gives more insights on GCC market mechanisms, its efficiency and investors' behavior to fill an existing gap in the literature.

The remainder of the paper is organized as follows: Section 2 discusses the GCC overview, while Section 3 reviews the theoretical and empirical literature. Section 4 describes data sources and presents the research methodology. Section 5 presents the empirical findings, while Section 6 summarizes the results and contains some concluding remarks.

2. GCC overview

In efficient stock markets, investors’ behavior could be expected based on firm performance and tax preference. However, this is not the case in GCC market. Both of geopolitical factors and the absence of stable long run target dividend policy of the firms create uncertainty about future firms’ performance that affect investor behavior. In addition of being a less mature and inefficient market, GCC investors’ behavior is unexpected. The most important characteristic of GCC firms is that there is absence of tax on dividend and capital gain (Rezvanian et al., 2015). Capital gains and dividends are perfect substitutes from the investor’s perspective with no confounding effects caused by differential tax policies. In addition, GCC stock markets are less mature than other markets, despite recent liberalization measures, so they continue to be less liberal and inefficient in the weak form of the Efficient Market Hypothesis (EMH); see Arouri et al. (2011), Al-Ajmi and Kim (2012), Bley (2011). Jamaani and Roca (2015) attribute this inefficiency to the low level of foreign participation, the high concentration in the financial sector, high market volatility and information asymmetry. GCC markets differ from those of developed and other emerging countries in that they are largely segmented from the international markets and are hyper-sensitive to regional political events. These characteristics raise the following question that can be answered through conducting this empirical research: *How does inefficiency of GCC markets affect share prices?* At a firm level, GCC firms suffer from low transparency level, weak corporate governance (Al-Malkawi et al, 2014), heavily indebted firms (Spindle, 2008), high payout ratios and frequent changes to dividends (Al-Yahyaee et al., 2011; Falgi, 2009) with high concentration of government ownership (see Al-Kuwari, 2009). These factors in addition to the high GCC market volatility make the investors’ behavior to be irrational and influenced by herding. Herding happens when investors copy others behavior and ignoring their personal beliefs. This herding behavior pushes asset prices apart from their fair economic values (Balcilar, Demirer, and Hammoudeh, 2013). Moreover, market instability and lack of traders’ experience exaggerate the herding effect.



### 3. Theoretical framework and literature review

Theories explaining dividends impact in short and long terms are well-known. Irrelevant, signaling and clientele effect are the main theories which have been used in the literature to explain the short term dividend impact, while EMH is mostly used to explain the long term dividend impact. Miller & Modigliani (1961) , firstly, studied the impact of dividend policy on firm value. Their study shows that, under certain limited conditions, the firm's dividend policy has no effect on the value of its stock. These conditions include no tax, no transaction cost, no information asymmetry between insiders and outsiders, etc. The implication of dividend irrelevance is that the dividend policy in these conditions will not affect the firm's market value. Investors are indifferent about whether the firm decides to reinvest or to distribute its earnings. This means that the market will not respond to the level of dividends, whether high, low or non-existed. Some studies state that dividend announcement do not convey information to the markets that support dividend irrelevance theory. These studies have been conducted in different developed and emerging markets such as, China (Chen et al., 2009), Bangladesh (Uddin and Chowdhury, 2005), and Slovenia (Mikluš and Oplotnik, 2016). Further, there is no evidence of a significant relationship between dividend policy changes and share prices (e.g. Black and Scholes (1974) for the US). On the contrary, in the dividend signaling paradigm, dividend payment is a way through which managers (insiders) can transmit the inside information to the general investor (Miller and Rock, 1985). Any unexpected change in dividends can be viewed as a management's forecast of future earnings (Bhattacharya, 1980; John and Williams, 1985). In this case, any increase (decrease) in dividends is viewed as a positive (negative) signal to an increase (decrease) in the share price. Thus, a major implication of the dividend signaling hypothesis is that dividend changes should be followed by changes in profitability in the same direction (Michael et al., 1995).

In this sense, GCC is a tax free region, while it is not a perfect market where not all the perfect markets assumptions are existed. One of the main reasons for this is the information asymmetry between individuals and businesses (Jamaani and Roca, 2015). There are various studies concerning the reasons for information asymmetry presence in GCC. Ismail (2002) reports that around 61% of 128 GCC listed firms are unable to publish their financial information to investors as they do not have official websites. In addition, the weakness of financial market development in GCC region comes from the weak markets



transparency. This leads to the constitution of information asymmetry (Jamaani and Roca, 2015) and consequently, impacts on the markets efficiency.

Therefore, signaling theory is more appropriate to explain the effect of dividend announcements on share price. Dividend announcements in short term can be classified into 3 different clusters, i.e. increase, decrease or constant. According to the literature, increased dividend announcements have a positive impact on prices. Lonie, Abeyratna, Power, and Sinclair (1996) examine the relationship between dividend increase and decrease announcements of 617 UK firms and share prices' firms. Their results are consistent with Michaely et al. (1995) and Dasilas and Leventis (2011); they report that decrease dividend announcements have a negative impact on share prices. Bessler and Nohel (2000) explore the shares of US banks over 1975-1991 and analysed how announcements relating to dividend cuts affected shares. Their studies show that decrease dividend announcements are associated with negative abnormal returns, whereas Uddin and Chowdhury (2005) report that investors do not gain value from dividend announcement. Dasilas and and Leventis (2011) conclude that dividend decreases are associated with average decreases in Greek share prices during 2000-2004. Hence, announced dividend increases lead to a significant positive reaction in stock price. Similarly, announcements of constant dividend indicate that there are no changes in the stock price while an announcement of dividend decrease would refer to decrease in share price (in accordance with the signaling hypothesis).

Therefore, for our empirical analysis we hypothesize that:

*H1: There are stock price reactions in the same direction of the dividend change announcements during the event window in the short term.*

In contrast to this stream of research that focuses on short term effect, there are other studies which explore long term valuation effects of dividend announcements. On the long term, dividend impact could be explained by the efficient markets hypothesis beside the signaling theory. This theory claims that share prices should react instantaneously to new public information due to the no arbitrage condition (Fama, 1998). Akhigbe and Madura (1996) confirm that initiation of dividends implied positive long-term share price performance. Meanwhile, omitting dividends led to unfavourable performance of stock prices. Thus, we may reject the dividend irrelevance hypothesis and confirm signalling theories of dividends. Michaely et al. (1995) explore the announcements of 561 dividend initiations and 887 dividend omissions of US listed firms over 1964-1988. Their study shows

that increase dividend announcements were associated with positive abnormal return for three years after the event.

Based on EMH, if the information provided by the announcement has significant information content, share prices should then shift almost immediately to incorporate the information provided. Market efficiency depends upon timely and free availability of information. It will be inefficient if there is a significance of the cumulated abnormal return (CAR) before the event, which means there are information leakages to the markets by an insider. If there are significant CARs after the event within a period of time, the adjustment in prices after the event date takes place with a substantial time lag. Therefore, we examine the CAR in different windows around good and bad dividend news. Thus, we examine the following research hypotheses:

*H2: There is a positive significant market price response in the long term after the announced good news in dividends.*

*H3: There is a negative significant market price response in the long term after the announced bad news in dividends.*

Investors' preference could also be determinants of trading. Clientele Effects theory explains such investor behavior. Firms attract shareholders who prefer their dividends' distributing patterns and how stable these dividends are. A number of researches have studied the clientele effect theory. Elton and Grubers (1970), firstly, claim that the ex-day price adjustments increase (decrease) with dividend yields, as a result low (high) imputed tax rate for high (low) dividend yield stocks. This is due to the fact that it is in favour of tax clienteles. This means the dividend clientele could have an impact on stock activity (Allen and Michaely, 2003). Moreover, Hotchkiss and Lawrence (2007) find that in case of announced dividend increase, the stock returns of firms are higher for firms with institutional investors who prefer dividends. These implications could be effective indicators for financial decision makers. Brav et al. (2005) state that CFOs are reluctant to make revolutionary changes for dividend policy; as these changes would likely change the investor base of the company, and that, in return, would negatively impact on the share price. In the existence of clientele effect, changes in dividend policy lead to changes in the investor trading behavior which, in term, leads to a change in share price. So, investors who are no longer interested in the company's new dividend policy, sell their shares. In the meantime, these shares will be purchased by other investors who prefer this new dividend policy. Changes in volume reflect

changes in the expectations of individual investors (Beaver, 1968). Therefore, investors' preference could be indicated by trading volume rather than share price.

Although several studies have investigated market reactions of share prices around dividend announcement in some of the GCC markets, none have investigated trading volume as an indicator of market reaction in GCC markets. The trading volume is also as important as share price in measuring market reaction. While equity prices may not react to dividend policy changes, trading volume may be a good indicator for investor behaviour. A number of studies document the significant impacts of dividend announcements on stock trading volume (Richardson et al., 1986; Gallant et al., 1992; and Dasilas and Leventis, 2011). Richardson et al. (1986) findings suggest that trading volume increases primarily in response to expected future earnings implied in the dividend in US. Dasilas and Leventis (2011) show that trading volume reaction is positively (negatively) correlated to dividend increases (decrease). According to clientele effect, a change in the dividend policy would lead to an increase in the volume traded as different groups of investors' trade their positions in response to the dividend policy change. Thus, we further examine the following research hypothesis:

*H4: The dividend change announcements have an impact on the trading volume response due to different investors' preference.*

To the best of our knowledge, with regards to the GCC markets, there are only three papers on the share price response to dividend announcements. Al-Yahyaee et al. (2011) suggest that the announcing of dividend increases for the firms listed in the Muscat Securities Market results in a significant positive reaction in stock prices; whereas announced dividend decreases lead to a significant fall in prices. In the same vein, another study conducted by Asiri (2014) for Bahrain. He concludes that the result failed to provide evidence in support of the dividends irrelevancy theory. The study indicates that dividend payments act as positive signals that assure investors of steady cash flow and substantial future earnings. Conversely, AlQudah and Badawi (2014) report different findings. They find that the Saudi Arabia market reaction to the dividend announcements is not significant because there are many limitations on dividend policy in this market. In short, the results discussed above are limited within few GCC markets; therefore, there is a need to conduct further research in order to suggest interpretative conclusions pertaining to the nature of GCC region.

The above studies focus on one GCC market; to have a full picture, our aim is to consider the whole GCC market. As mentioned above, GCC is a tax free, while perfect

market assumptions are not existed. Therefore, this raises an important question to be answered of what theory could explain the GCC investors' behaviour by studying the impact of dividend announcement to the market reaction. According to Balcilar et al. (2013), GCC suffers from investor herding effects, and therefore market reactions should be measured by trading volume beside share price. Unlike other studies, this paper uses trading volume to consider the herding effects in GCC; this is one of our contributions to the existing literature as explained above.

#### 4. Research Methodology and data description

##### 4.1 Methodology

We initially test the market response to dividend change announcements, using the event study methodology as described in Campbell et al. (1997) and McClusky et al. (2006). Using the market model, we calculate daily average of abnormal return (AR) and cumulative average of abnormal return CAR for different window periods. Also, we calculate the abnormal trading volume ( $ATV_{it}$ ) by using the difference between trading volume ( $TV_{it}$ ) and the expected trading volume for that date divided by the standard deviation of trading volume during the estimation period. ARs or TVs are defined as the excess in prices or volumes that have occurred as a result of the event. We test the normal distribution of cumulative average abnormal returns (CAAR) and trading volume (CATV) during the event. If there is a significant impact of the dividend announcement, there should be a significant CAAR/or CATV around the announcement. If the CARs/or CATVs is normally distributed, we can conclude that the announcement does not significantly affect the abnormal returns as this indicates the investors parse the dividend announcements rationally.

- Abnormal return (AR)

We calculate daily stock returns as follows<sup>1</sup>:

$$R_{it} = \ln P_{it} - \ln P_{it-1} \quad (1)$$

Where:

$R_{it}$  is the actual return on share  $i$  in day  $t$ ;  $P_{it}$  is the price of share  $i$  in day  $t$  and  $P_{it-1}$  is the price of share  $i$  in day  $t-1$ .

<sup>1</sup> Strong (1992) suggests two reasons for which logarithmic returns are preferable to discrete returns: (1) logarithmic returns are analytically more tractable when linking together sub-period returns, forming returns over longer intervals, and (2) logarithmic returns are more likely to be normally distributed and so are more likely to conform to the assumptions of standard statistical techniques.

Then we calculate the abnormal return by using the markets adjusted model. The market adjusted model is commonly used in empirical research on the subject and defined by Brown and Warner (1985).

$$(AR_{it}) = R_{it} - R_{mt} \quad (2)$$

$(AR_{it})$  is the abnormal return;  $(R_{it})$  is the return on the stock and  $(R_{mt})$  is the return of the market index

The daily abnormal returns are then averaged across a portfolio of firms which increase, decrease or neutralise their dividend level as follows:

$$AAR_{pt} = \sum_{i=1}^n \frac{AR_{it}}{n} \quad (3)$$

Where:

$n$  is the total number of dividend announcements,  $t$  is the days surrounding the event-day,  $i$  is the firm,  $AAR_{pt}$  is the average portfolio abnormal return and  $p = (DI)$  for dividend-increasing firms,  $(DD)$  for dividend-decreasing firms and  $(DC)$  for constant dividend firms.

We test the following null hypothesis, i.e. the mean abnormal returns on day  $t$  of the event window is equal to zero. The test statistic is the ratio of cross-sectional average and standard deviation, respectively, of the abnormal returns of stock on day  $t$ . The  $t$  statistic for  $AAR_t$  were calculated as follows:

$$t(AAR_t) = \frac{AAR_t \cdot \sqrt{N}}{\sigma(AR_t)} \quad (4)$$

- Cumulative abnormal return (CAR)

Moreover, we consider the cumulative abnormal return (CAR) which is the sum of a firm's abnormal returns over a certain period, pre- or post-event.

CAAR for the event window and sub-windows that begin at  $t$  and end at  $k$

$$CAAR_i(t, k) = \sum_{t=0}^k AAR_t \quad (5)$$

The variance of the sample is obtained by the following formula:

$$S_{AAR}^2 = \frac{1}{240} \sum_{t=-120}^{120} (AAR_t - \overline{AAR_t})^2 \quad (6)$$

The t statistic used to test the hypothesis CAAR equal to zero is calculated as:

$$T \text{ statistic} = \frac{CAAR_{t,t+k}}{\sqrt{(k+1)S_{AAR}^2}} \quad (7)$$

- Abnormal trading volume (ATV)

In addition to market price reaction, we also examine the trading volume reaction to dividend change announcements. The examination of the trading volume around dividend change announcements helps to explain whether there is correlation between information released by dividend announcements and buying or selling pressure on stocks traded.

Following Dasilas and Leventis (2011), the abnormal trading volume ( $ATV_{it}$ ) of share  $i$  is estimated on day  $t$  as the difference between trading volume ( $TV_{it}$ ) and the expected trading volume for that date ( $E(TV_{it})$ ), divided by the standard deviation of trading volumes during the estimation period ( $\sigma_i$ ):

$$ATV_{it} = \frac{TV_{it} - E(TV_{it})}{\sigma_i} \quad (8)$$

Where  $E(TV_{it})$  and  $\sigma_i$  are the mean and standard deviation in daily trading volume for firm  $i$  in the estimation window ( $t=-120$  to  $-21$  and  $t=+21$  to  $+120$ ).

The t statistic used to test the hypothesis ATV equal to zero is calculated as:

$$T(ATV_{it}) = \frac{\overline{ATV_{it}} - 0}{\sigma(ATV_{it})} \quad (9)$$

#### 4.2 Data description

We collected dividend announcements from Arab Stock Markets Analysis (ASMA) for 7 GCC markets: Abu Dhabi, Bahrain, Dubai, Kuwait, Oman, Qatar and Saudi Arabia. Our sample considers the period from January 2010 to June 2015. Daily closing stock price, market price indices and trading volumes around dividend announcements for these listed firms are derived from *Datastream*. Firms only being included in the sample when the following criteria are fulfilled: (a) The dividend announcements should be purely annual cash dividend; (b) There are no announcements of stock splits or ex-dates of stock splits during the event window; (c) Non-regular (extra-special) dividends are repudiated. The effect of these dividends is short lived and, therefore, may not carry any signalling value; and (d) Trading volume data are available for the period commencing 120 days before and after the dividend

announcement date. These criteria led to a final sample of 299 listed firms with 1,092 dividend announcements consisting of 497 dividend increases (DI), 223 dividend decreases (DD) and 372 constant dividends (DC).

Table 1 shows the total number of Dividend Increases, Decreases and constant dividends, based on each sample for the GCC member states. Saudi Arabia is one of the ‘biggest players’ in our research sample, with Bahrain as the smallest GCC country in the sample. Interestingly, the firms that have high tendency in distributing constant dividends are Oman and Kuwait.

**Table 1. Total number of Dividend Increases, Decreases, and constant dividends, based on each sample of the GCC member states.**

Countries	Dividend Increase	Dividend Decrease	Constant Dividend	Full Sample
BAHRAIN	7	7	10	24
KUWAIT	36	25	62	123
OMAN	48	29	71	148
QATAR	109	48	49	206
SAUDI ARABIA	219	91	146	456
UAE	78	23	34	135
TOTAL	497	223	372	1092

The day of the dividend announcement ( $t=0$ ) is defined as the date on which the first official reference to the dividend is made in press releases. Where the dividend announcement was released during non-trading hours, the event day was considered the next trading day. As a consequence of the irregular nature of the information environment within GCC stock markets, it is possible that markets begin to react before announcements are made. The choice of a broad event window (of -20, +20) is offered in order to capture the fact that the Board of Directors in GCC markets vote to pay dividend about 20 trading days prior the public declaration. The insider information might be leaked prior the announcement date.

Table 2 presents the descriptive statistics of our sample regarding dividend change ( $\Delta D$ ), earning change ( $\Delta E$ ), dividend yield (DY), average abnormal return on announcement date (AR) and average abnormal trading volume on the announcement date (ATV) of GCC markets for the period between January 1, 2010 and June 31, 2015.



**Table 2. Descriptive statistics for the whole sample of dividend announcements**

	$\Delta D(C)$	$\Delta E(C)$	DY(%)	AR(%)	ATV(thousand)
Mean	.0045	.0039	4.46	.0049	.71
St. Deviation	.029	.053	2.39	1.26	1.91
Max	.12	.16	13.45	6.818	9.04
Min	-.11	-.24	0	-5.45	-.98

## 5. Empirical results

This part presents the findings that include share price and trading volume reactions to the dividend announcements changes in the absent tax environment. The findings have been divided into three groups, market price response in short term, market response in long term and trading volume response to good and bad dividend news. Considering the unique information environment of GCC, we expect that dividend change announcements will send only a weak signal to the market.

### 5.1 Market price response

Figure 1 shows the cumulative abnormal returns (CAR) for good news from day -120 up to day +120 for GCC markets. It can be seen that the CAAR moves upward significantly from day (t=4) following the announcement. This trend continues after the event, probably due to the impact of some available market conditions. Moreover, this means that prices do not adjust immediately to dividend information. Thus, the stock prices respond slowly and gradually to the dividend information on the event day. According to McQueen et al. (1996) they conclude that a slow response by small stocks is accompanied with good news, but not with bad news; this is due to the efficiency of market, and the volatility of the stocks.

**Figure 1. Cumulative Average Abnormal Return for dividend increase (DI) cluster**

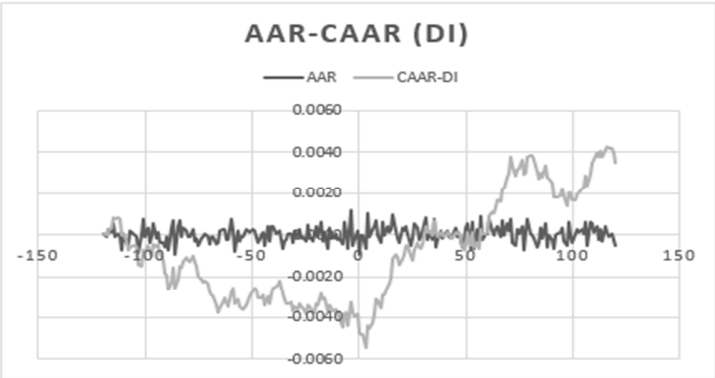
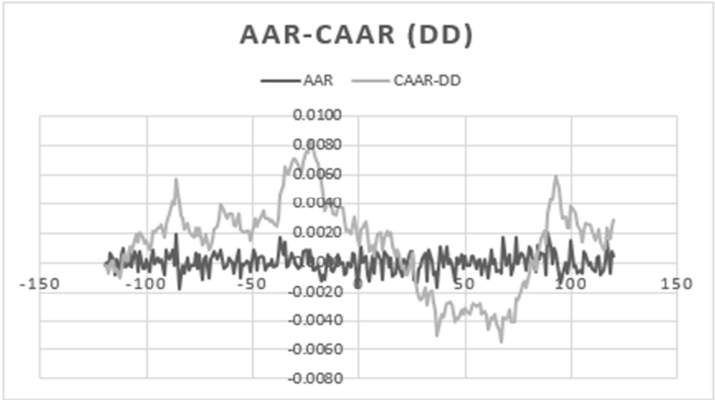


Figure 2 shows (CAAR) for bad news from day -120 up to day +120 for GCC markets. There is an upper trend in the pre-event period with the bad news reaction showing a downward reaction from  $t = -18$  before the announcement and after board meeting. Further, the results show that the market reaction to the announcement of dividend decreases is stronger than in the case of dividend increases. This is consistent with the works of Leippold et al. (2008) and Kothari et al. (2009) who suggest that investors tend to place greater significance on bad news compared with good news.

**Figure 2. Cumulative Average Abnormal Return for dividend decrease (DD) cluster**



- *Short term effect*

Table 3 shows the stock market response to different types of dividend change announcement for the sub-sample of 1092 stock dividend announcements in GCC companies for the period from January 2010 to June 2015.

**Table 3. Average Abnormal Return (AAR)**

day	Dividend increase N= 497 (45.5%)			Dividend constant N=372 (34.1%)			Dividend decrease N=223 (20.4%)		
	AAR	T	CAAR	AAR	T	CAAR	AAR	T	CAAR
t= -6	0.01	0.18	0.00	0.01	0.11	0.47	-0.07	-0.99	-0.52
t= -4	0.12	2.09**	0.05	0.00	0.00	0.41	-0.03	-0.33	-0.54
t= -2	-0.02	-0.43	-0.02	-0.05	-0.83	0.36	0.05	0.73	-0.42
t= -1	0.02	0.22	-0.01	-0.02	-0.25	0.34	-0.15	-2.18**	-0.58
t=0	-0.10	-1.36	-0.10	0.12	1.29	0.47	-0.03	-0.30	-0.61
t=1	0.00	-0.07	-0.11	0.05	0.45	0.51	0.11	1.05	-0.51
t=2	0.00	-0.01	-0.11	-0.05	-0.57	0.46	0.01	0.09	-0.50
t=4	0.11	2.13**	-0.07	0.03	0.50	0.54	-0.08	-1.05	-0.54
t=6	0.03	0.48	-0.05	-0.06	-0.92	0.42	0.05	0.60	-0.61

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level

Table 3 illustrates the stock market responses to the *dividend increase* group. The results suggest a support to hypothesis H1, i.e. the market price responds significantly in the positive direction when a dividend increase is announced. From Table 3, the AAR for the dividend-increasing group of companies on event day (t=0) was -0.10% (with t-value of -1.36). Several previous studies held that the event day for dividend increase should be a positive value. Charest (1978) and Ahrony and Swary (1980) suggest that dividend increases should reflect positive information relating to the prospects of the company. There is also another positive significance value on the day (t=+4) where the AAR was 0.11%. This implies that the market failed to adjust immediately to the dividend announcement. This result is in line with Ball and Brown (1968) and Fama et al. (1969) for the US market; they were the first who noticed that there is a delay in the stock market's response to events that contain relevant information. This can be explained by inexperienced and poorly-informed investors failing to appreciate the full and accurate implications of the announcement (Ng et al., 2008).

The results of *constant dividend* announcements are reported in Table 3 which confirmed that H1 is accepted. The findings show that there is price response to the announcement date. This suggests that announcements of constant dividend convey a neutral signal to the market. The companies announced a constant dividend every year on the face

value of the share. Therefore, shareholders were already familiar with the general dividend values. The result shows that there is no drastic change to stock returns.

The result of stock market reactions to the *dividend decrease* category revealed that the AAR earned on day (t-1) and on day (t=0) were -15% and -0.03% (with a t-value of (-2.18) and (-0.30), respectively). So, there is a negative significance of market price response one day before the announcement, and hence H1 is accepted. The results are consistent with the information content hypothesis. Ross (1977) and Bhattacharya (1980) suggested that, in a world of information asymmetry, an announcement of a cut in dividends may convey a pessimistic message about management’s assessment of the future prospects of the firm.

• *Long term effect*

Table 4 shows the long term effect of dividend announcements on the stock market when the dividend either increases or decreases which we view in terms of good and bad news before and after the announcement.

**Table 4. Cumulative average abnormal return (CAAR) in the long term**

Long-term Abnormal Returns					Long-term Abnormal Returns				
GOOD NEWS					BAD NEWS				
Event day	CAAR	T	CAAR	T	Event day	CAAR	T	CAAR	T
[-10 , 0]	-0.001	-0.58	-0.002	-0.89	[20 , 1]	0.004	2.11**	-0.002	-0.49
[-20 , 0]	-0.001	-0.46	-0.006	-2.13**	[30 , 1]	0.004	2.05**	-0.004	-0.92
[-30 , 0]	-0.001	-0.48	-0.006	-1.73	[40 , 1]	0.005	1.93*	-0.005	-1.03
[-10 , -1]	0.000	-0.11	-0.002	-0.73	[-10 , 10]	0.00	0.06	0.00	-0.38
[-20 , -1]	0.000	-0.04	-0.006	-2.01*	[-20 , 20]	0.00	1.05	-0.01	-1.76**
[-30 , -1]	0.000	-0.08	-0.006	-1.63	[-30 , 30]	0.003	1.06	-0.01	-1.8**

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level

• *Before event:*

The t-values are mostly insignificant for pre-dividend announcements as we can see in Table 2, where there is probably no previous reaction before the good news. For the bad news, t-values are significant for the window frame [-20, 0] and [-20, -1]. We argue that the downward reaction starts around 20 days before the event. This may happen after the board meeting is conducted. That is, there is a leakage of information in the market about the dividend offered by the company before its official announcement. According to the semi-strong form of EMH, price effect should occur only on the announcement day itself and should reverse immediately with no effect being observed before the event.

- *After the event:*

Looking at the good news, t-values of CAAR were significant, as shown in Table 2, for the long term after the event for the time frame [20, 1], [30, 1] and [40, 1]. Thus, the response of the market reaction would be delayed by the market participants due to information asymmetry or unavailability of getting information on time. This would be the reaction of market followers who still try to make profit by following an initial group of gainers. After this, the delayed response would be the reactions by another group of participants who follow the second group of followers. Therefore, we don't accept the EMH.

The above result implies that H2 is accepted. For the bad news the t-values of CAAR in the long term are totally insignificant, so H3 is rejected accordingly. In particular, T-values are -1.01 for the time frame [30, 0], -1.03 [40, 1] and -0.91[60, 1]. Overall, there is a long term positive and significant CAAR effects on dividends following the announcement of good news; while there is no significant value of CAAR before the event. Furthermore, there is no long term negative significant (CAAR) following the announcement of bad news while there is a reaction before the announcement suggesting that there is a leakage of information from the firm's insider.

## 5.2 Trading volume response

Table 5 describes the results found from the analysis of the abnormal trading volumes during the event window. The results show a strong support to the hypothesis that news on dividends conveys new and valuable information to the market. In all cases, there are significant (ATVs) two days prior to the dividend announcement.

**Table 5. Average Abnormal trading volume (AATV)**

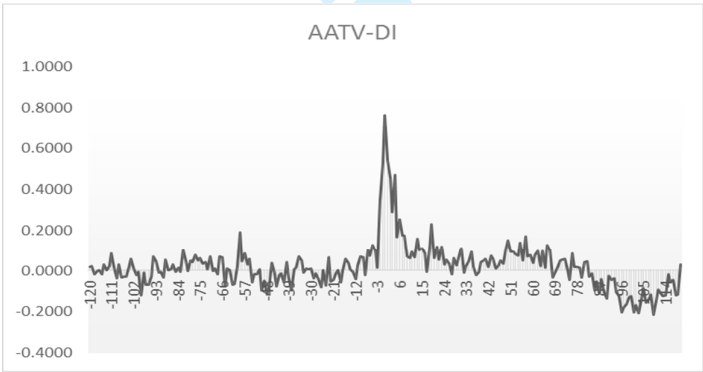
Day	Full sample N=1092		Dividend increase N= 497		Constant Dividend N=372		Dividend decrease N=223	
	AATV	T	AATV	T	AATV	T	AATV	T
t=-5	0.12	2.65***	0.13	1.84*	0.09	1.10	0.15	1.86*
t=-4	0.15	3.66***	0.10	1.59	0.17	2.58**	0.23	2.43**
t=-3	0.07	1.56	0.02	0.32	0.01	0.18	0.31	1.68*
t=-2	0.29	6.58***	0.35	5.36***	0.16	2.37**	0.39	3.31***
t=-1	0.54	9.16***	0.52	6.77***	0.49	4.48***	0.64	4.63***
t=0	0.80	10.86***	0.76	8.34***	0.81	5.10***	0.85	6.14***
t=1	0.52	8.89***	0.54	5.30***	0.47	5.79***	0.56	5.23***
t=2	0.45	7.87***	0.46	4.96***	0.50	5.02***	0.36	3.84***
t=3	0.31	6.25***	0.29	3.63***	0.25	3.81***	0.46	3.72***
t=4	0.40	2.45**	0.47	1.38	0.26	3.35***	0.45	3.47***
t=5	0.20	4.83***	0.17	2.96***	0.13	2.17**	0.41	3.16***

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level

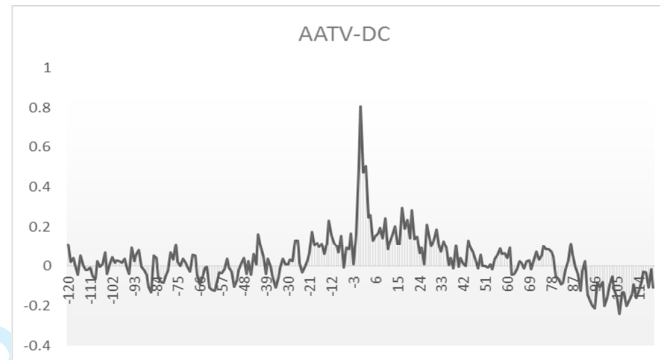
Significant positive ATV reaction around dividend announcements is found in all clusters. This indicates that any form of dividend announcement conveys new and valuable information to the market. Since investors receive their information from diverse sources and differ in the precision of their private prior information, response to new information also varies, thus leading to an increase in trading volume. Therefore, H4 is accepted implying that the dividend change announcements of GCC markets have an impact on the trading volume due to different investors' interpretations of the announcements. This is reflected by the fact that, in all cases, there is an increase in trading volume following dividend announcements which implies the clientele effect is operational in the GCC countries despite the lack of any tax incentives.

Figures 3, 4, and 5 show the average abnormal trading volume in 3 three different clusters DI, DD and DC. Investors' decision is highly impacted by any information available from leakage, noise trader, rumours from big trader, private information, etc. It is likely that the investors plan to possess the stock until before the Ex-dividend day (the first trading date on which the stock trades without the dividend) for the purpose of gaining the dividend distribution regardless of dividend change.

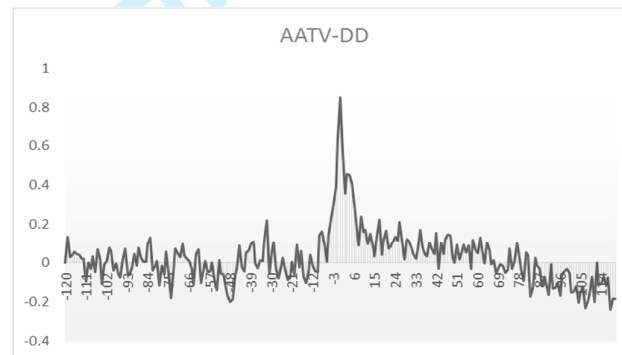
**Figure 3. The average abnormal trading volume in dividend increase (DI) cluster**



**Figure 4. The average abnormal trading volume in constant dividend (DC) cluster**



**Figure 5. The average abnormal trading volume in dividend decrease (DD) cluster**



Overall, our findings suggest that the dividend announcements are significantly informative in GCC, although it is a free tax region. This means dividend announcement changes impact on share price and trading volume in GCC, as this could follow clientele effect rather than irrelevant theory which argues that under perfect capital market assumptions (such as no differences between taxes on dividends and capital gains, no stock flotation or transaction costs etc.) dividend policy would be irrelevant; and tax based signalling hypothesis which states that higher taxes on dividends relative to capital gains are a necessary condition for dividends to have information and be informative.



Table 6. Regression analysis of abnormal returns to dividend announcement

Variables	Coefficient	t-Statistic
Constant	-5.50***	(-2.61)
DY	0.086*	(1.73)
MV	1.59**	(2.47)
$\Delta D\%$	-0.18	(-1.33)
PREAV	0.14	(.47)
<i>adj R</i> <sup>2</sup>	0.0035	
Prob>F	0.0067	
Observations	1092	

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level

Notes: This table represents the results obtained from regressing cumulative abnormal returns of three days around dividend announcements (CAR- 1,+1). DY is the dividend yield estimated as the ratio of dividend for the year over the price. MV is logarithmic market capitalization.  $\Delta D\%$  is the percentage change between the current and the previous dividend. PREAV is the abnormal trading volume as a percentage of the average trading volume during the pre-announcement period. The significance of the White heteroscedasticity consistent t-test of each variable is in parentheses. No autocorrelation was detected for any of the regressions presented. To reduce the potential impact of outliers, all variables are winsorized at the 1% and 99% levels.

5.3 Market response determinants

In order to get a better insight into which variables influence the share price reaction to dividend announcements, we perform four regression analyses for the full sample of dividend announcements.

5.3.1 Cumulative abnormal returns

We conduct a regression analysis of the cumulative abnormal returns for the three days on the event period (CAR-1,+1) against a number of independent variables such as dividend yield (DY), market capitalization (MV), percentage change in dividend ( $\% \Delta D$ ) and pre-announcement abnormal trading volume (PREAV). The choice of explanatory variables followed prior research (Wansley et al., 1991; Impson, 1997; Fuller, 2003; Lee and Yan, 2003; McClusky et al., 2006; Dasilas and Leventis, 2011). The DY is included to control for a potential clientele effect documented by Bajaj and Vijh, (1990). The firm size control is added due to the empirical observation that small firms tend to have higher returns on average (Fuller, 2003). The ( $\% \Delta D$ ) is considered based on the work of previous studies such as Eades (1982) and Asquish and Mullisn, (1983) who found significant relationships between announcement effects and changes in dividend. Moreover, the average trading volume during the pre-announcement period is added by Eberhart and Damodaran (1997) who reported that it is a significant determinant of abnormal returns in the period surrounding an earnings announcement.

There are two common regression techniques (models) for the panel data estimation: fixed effects model and random effects model. Further, Hausman tests the null hypothesis that random effects model is more appropriate than fixed effects model. Thus, the model reported as follows:

$$CAR_{(-1,+1)} = \hat{\alpha} + \hat{\beta}_1 DY + \hat{\beta}_2 MV + \hat{\beta}_3 \Delta D\% + \hat{\beta}_4 PREATV + \hat{\beta}_5 MARKETS + \hat{\beta}_6 YEARS + \hat{\varepsilon}_t \quad (10)$$

Where:

DY is the dividend yield estimated as the ratio of the annual dividend over the price.

MV refers to the firm size as measured by the logarithmic market capitalization.

%ΔD denotes the percentage change in the dividend from year to year.

PREATV is the abnormal trading volume as a percentage of the average trading volume during the pre-announcement period.

Markets dummies have been included (MARKETS) to control for country effects; whilst year dummies have been included (YEARS) to control for year effects.

Table 6 shows the results from all the regressions described in Eq. (10) for the full sample. The coefficient of dividend yield (DY) is positive and statistically significant at the 10% level ( $t=1.73$ ). This suggests that dividend yield is one of the main drivers of ARs on dividend announcement dates. This finding is in line with Wansley et al. (1991), Lee and Yan (2003) and Dasilas and Leventis (2011). The positive effect of DY on cumulative abnormal return could be explained by the fact that the higher dividend yield, the more attractive the share to investors. Our findings are consistent with Bajaj, M., & Vijn, A. M. (1990) but are inconsistent with Healy, Hathorn and Kirch (1997). Moreover, the coefficient of MV displays a positive sign, meaning that the larger the size of the firm, the more positive is the effect on the abnormal return. This result contradicts that of Fuller's (2003) study for the US. It should be noted that Fuller's (2003) inclusion of firm size was to control for the small firm premium observed in the US. Also, the positively significant MV could be explained by the negative relationship between the firm size and the level of information asymmetry. Haw and Kim (1991, p.342) argue that "*the dividend announcement effect varies across firms with different degrees of information asymmetry*". They stated that the significant of information content is negatively related with the firm size. This result is consistent with Miller and Rock (1985). We further use the percentage change of dividend as a proxy for the dividend changes information content as recommended by Asquith and Mullins (1983). Change of dividend

does not show any significance. Pre-announcement trading volume (PREATV) is positive and insignificant which means it is not a main driver for the cumulative abnormal return. Kim and Verrecchia (1991) report the same positive relationship between abnormal return and trading volume. These results are consistent with Dasilas and Leventis (2011).

**Table 7. Regression analysis of abnormal trading volume to dividend announcement**

Variables	Coefficient	t-Statistic
Constant	1.78***	(6.45)
$\Delta D/P$	13.66**	(2.52)
$\Delta E/P$	-1.96	(-0.65)
MARKETS	M1=1.49***	(2.99)
R <sup>2</sup>	2.08	
Prob> chi2	0.0144	
Observations	1092	

\*significant at 10% level, \*\*significant at 5% level, \*\*\*significant at 1% level

Notes: This table represents the results obtained from regressing cumulative abnormal trading volume of five days around dividend announcements (CATV-2, +2).  $\Delta D/P$  is the changes in dividends to the stock price 10 days before the announcement day.  $\Delta E/p$  is the changes in earnings relative to the stock price 10 days before the announcement day. MARKETS is markets dummies. The significance of the White heteroscedasticity consistent t-test of each variable is in parentheses. No autocorrelation was detected for any of the regressions presented.

5.3.2 Cumulative abnormal trading volume

To further understand the impact of dividend announcements on trading volume response, we examine the impact of a dividend change and earnings change relative to stock price on trading volume by using the tax based singling model. In terms of a better insight into which variables influence the trading volume reaction to dividend announcements, we performed four regressions analyses for the full sample of dividend announcements. The cumulative abnormal trading volume on the event period (CATV -2 ,+2) is regressed against a number of independent variables such as dividend change to stock price and earning change to stock price.

The choice of explanatory variables is in accordance with the study conducted by Al-Yahyaee et al. (2011) for Oman. The motivation behind the separation between the changes in the dividend and earning was given by Amihud and Murgia (1997), i.e. that earnings and dividend announcements may not occur on the same day and thus, that information in dividends could be used to corroborate the information in earnings. We used CATV instead of AR as dependent variable, while random effect models are selected; further, CATV is calculated over five days. The model is reported as follows:

$$CATV_{(-2,+2)} = \hat{\alpha} + \hat{\beta}_1 \Delta D/P + \hat{\beta}_2 \Delta E/P + \hat{\beta}_3 \text{ MARKETS} + \hat{\varepsilon}_t \quad (11)$$

Where:

$\Delta D/P$  is the dividend change to stock price.

$\Delta E/P$  is the earning change to stock price.

Markets dummies were included (MARKETS) to control for year effects.

Our results, reported in Table 7, show that the ATV of a full sample of dividend announcements is influenced by dividend change. The t- statistic of dividend change to stock price is positive and significant at the 5% level. There are no important differences between the response coefficients of dividend increases and decreases. As in Amihud and Murgia (1997), changes in dividends result in significant positive stock price reactions beyond what might be expected for the information conveyed just by changes in earnings. Under tax-based signalling models predict that dividends are not informative or are, at least, less informative in tax free environment. Further, the result of this part finds that the trading volume reacts to cash dividend announcements; this would suggest that higher taxation on dividends relative to capital gains is not a necessary condition for dividends to be informative.

## 6. Summary and Conclusion

This study examines the market response to 1092 dividend announcements in 299 firms from GCC markets during the period January 2010 - June 2015. We conducted a parallel examination of the impact of dividend announcements on both share price and trading volume to account changes for the possibility that the information provided by the dividend announcements. This information may affect the market through individual investors as shown through changes in trading volumes (TVs) even though these individual changes in expectations might not lead to aggregate effects such as share prices changes. By doing so, this is the first empirical study that comprehensively examines the effects of dividend policy changes in the GCC markets systematically taking into account both trading volume and price effects. Our analysis of share price response is done on both short term and long term. In the short term, three different patterns of change in dividends, i.e. increase, decrease and constant are considered. For dividend increases, our results imply that there are delayed reactions from investors. In other words, the stock prices do not adjust immediately to the new information in the announcement. This suggests that market efficiency is low in the GCC markets given that a dividend increase was reflected in the markets four days later, while the efficient markets hypothesis suggests that markets should reflect the information

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3 contained instantaneously in the dividend announcement. In the meantime, dividend  
4 decreases, reveals some significant negative share price reaction while constant dividends  
5 leave stock prices untouched. Nevertheless, Tax-based signalling models claim that dividend  
6 are not informative in free tax markets; our study found informative dividend in GCC. This  
7 finding is consistent with previous studies such as Amihud and Murgia (1997).  
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11 When the long-term abnormal returns are examined, there were negative and  
12 significant (CARs) observed in the period before the dividend announcement in the case of  
13 the dividend decreases sample but there were no significant ARs in the DI sample. This  
14 suggests some evidence of information leakage in the bad news case as there should be no  
15 significant ARs prior to the announcement. This is due to the fact that the information has not  
16 yet been publicly disseminated to the markets. This is consistent with Khan et al. (2013).  
17 Further, the findings of our study show significant price changes prior to the dividend  
18 decrease announcement and immediately after the board meeting suggesting that there may  
19 be considerable information leakage that needs to be plugged. CFOs should therefore closely  
20 monitor trading in the company's shares in the period after a board meeting and before the  
21 public announcement has been made to determine whether there is information leakage  
22 within specific firms. Also the board meeting should be more confidential in order not to be  
23 negatively affected from the share prices reaction. After the announcement, there are positive  
24 and significant ARs in the good news case over the long-run, suggesting that portfolio  
25 readjustments happen over the long-run and not immediately as suggested by the EMH. In  
26 the bad news case, however, there are no significant ARs. This is inconsistent with Travlos et  
27 al. (2001).  
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41 The results from the examination of ATV highlight the information content of  
42 dividend announcements which is mainly reflected in TV changes. There are significant  
43 increases in the ATV in the event window. This was observed in the full sample and in all  
44 sub-samples. This result corresponds with the clientele effect which predicts elevated TV  
45 around the period of dividend announcements as different investor groups adjust their  
46 positions in response to the new information conveyed by the dividend announcement. As a  
47 TV is a good indicator of investor behaviour, in our case, dividend announcements tend to  
48 convey new and valuable information to the investors. Because investors are distinctly  
49 informed in the precision of their prior private information, they respond differently to new  
50 information and this would result in an increase in trading volume to dividend changes. In  
51 GCC, the investors react regardless dividend change. Our findings confirm that GCC  
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investors are irrational because of herding effect, investors heterogeneous, rumours and noise traders' effect.

Finally, we extend previous studies (e.g. Al-Yahyaee et al, 2011; Dasilas and Leventis, 2011) on trading volume reactions to dividend change announcements by using the model proposed by Amihud and Murgia (1997). We consider CATV for short term event period instead of AR as a dependent variable, and investigate: (1) which changes have more impact on investors' behaviour; and (2) whether the announcement conveys new information to investors which, in turn, influences their trading. In other words, we examine if the investors react based on their own interpretations of the announcements. Our results show that dividends news contain information, whereas, the earnings change does not provide explanatory power to the variation of TV reaction to the announcement. From our findings we recommend policy makers to use trading volume side to side to share price to reflect the investors' behaviour.

Further, our findings may provide important economic implications at the macro-level. An extensive literature has linked macroeconomic news announcements to movements in financial data (see Gilbert et al., 2015). They report that the effect announcements depend on the information environment. For example, the announcement of the State's General Budget is usually announced in December of the year while the dividend announcement of the first three months of the year. Thus, the announcement of the state budget affects the decisions of the GCC investors (and their preferences) in making their investment decisions. The economies of the GCC countries are highly sensitive to oil prices and propped by oil revenues (Balcilar. et al, 2013). Naceur et al. (2006) highlight the fact that GCC states are oil producing countries, and thus oil revenues are a detrimental factor in stimulating investment and real growth. Given the lack of high-frequency transaction data that is available for GCC markets and firms (but also the way their macro and dividend data is available), it is not possible to examine possible effects of macro announcements on both the stock price and trading volume for GCC (as given by Vortellinos et al., 2017 for mini-futures markets). However, the current economic situation of these emerging markets provides evidence that economic announcements (good/bad news) may affect their performance and the fact that investors' preferences leads to an increase in trading volume to dividend changes. The GCC markets are connected through a political and economic union, which means that a market shock in one member country can be quickly transmitted to the other members, institutionalizing herding mentality. Therefore, we argue that the Gulf economic integration,



including the diversification of regulations and procedures from one country to another, and the activation of agreements such as the Customs Union and the Gulf Common Market and the unified Gulf currency, will help the markets to be efficient and independent from the fluctuation of the oil price and the macro-economic announcements (good/bad news); this result will change the behavior (and preferences) of GCC investors.

Our results are highly recommended to financial analysts and investors dealing with the GCC markets. However, a number of interesting topics that remain unexplored may be investigated. Further research should examine if firms from GCC countries are smoothing and determine firms' propensity to smooth using recent data and advanced methodology.

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